

26. (New) A surgical instrument system for use in surgical procedures, said surgical instrument system comprising:

a guide assembly including an elongated portion having a longitudinal axis of rotation, a receiving passage and a distal end that is positioned a radial distance away from the longitudinal axis;

a surgical tip assembly disposed through, and at least partially supported by, the receiving passage of said guide assembly; and

a drive unit coupled to at least said guide assembly for rotating said guide assembly and, and by virtue of the distal end being disposed a radial distance away from the longitudinal axis, thereby causing the distal end of said surgical tip assembly to orbit the longitudinal axis.

27. (New) The surgical system of claim 26, wherein said guide assembly includes a guide tube that is curved at its distal end so as to position the distal end a radial distance away from the longitudinal axis.

28. (New) The surgical system of claim 27, wherein said surgical tip assembly has its distal end extend beyond the curved distal end of said guide tube.

29. (New) The surgical system of claim 26, wherein said surgical tip assembly provides at least three degrees of freedom.

30. (New) The surgical system of claim 26, wherein said guide assembly and said surgical tip assembly are coupled to the drive unit.

31. (New) The surgical system of claim 26, wherein said surgical tip assembly includes, at its distal end, an end effector having opposing grip portions.

32. (New) A surgical instrument system for use in surgical procedures, said surgical instrument system comprising:

a guide assembly positionable in a surgical environment, said guide assembly including a proximal end and a distal end, and including an opening along a longitudinal length of said guide assembly, said guide assembly being adapted for insertion into a patient and being adapted for rotation about a longitudinal axis of said guide assembly when inserted into the patient;

an instrument member having an end effector that is used in surgical procedures, and is received by said proximal end of said guide assembly, passed through said opening, and to said distal end of said guide assembly within the patient; and

a drive unit coupled to said instrument member for manipulating said end effector within the patient.

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33. (New) The surgical system of claim 32, wherein said drive unit is further coupled to said guide assembly for rotating said guide assembly and thereby rotating said end effector within the patient.
 34. (New) The surgical system of claim 32, wherein said guide assembly includes a guide tube that is curved at its distal end.
 35. (New) The surgical system of claim 34, wherein said end effector is at least partially insertable into said guide tube.
 36. (New) The surgical system of claim 32, wherein said end effector provides at least three degrees of freedom of movement within the patient.
 37. (New) The surgical system of claim 36, wherein said end effector includes two opposing gripper portions for use in surgical procedures.
 38. (New) The surgical system of claim 32, wherein said drive unit is coupled to a computer processing unit, and wherein said drive unit is adapted to control the

movement of said end effector responsive to an automated procedure stored in said computer processing unit.

39. (New) The surgical system of claim 32, wherein said drive unit is detachably coupled to said end effector.
40. (New) The surgical system of claim 32, wherein said drive unit is detachably coupled to said guide assembly.
41. (New) The surgical system of claim 32, wherein said drive unit is further coupled to said guide assembly for rotating said guide assembly and thereby rotating said end effector within the patient, and for sliding said guide assembly along a linear path with respect to the surgical environment.
42. (New) A surgical instrument comprising:
a distal end that is adapted to be inserted into a patient during surgery;
a proximal end that is adapted to remain outside of the patient during surgery;
a tubular adaptor having means for receiving and supporting said instrument;
a plurality of link members coupled to one another via at least one joint that is interposed between adjacent link members, at least some of said link members being located at the distal end of the instrument, said instrument providing at least five degrees of freedom of movement of the distal end of said instrument inside of the patient; and
drive means for effecting movement of said plurality of link members about said at least one joint, and for controlling rotation of said adaptor while supporting said instrument.
43. (New) A surgical instrument for use in surgical procedures that are performed at an operative site internal of a patient, said surgical instrument comprising:

a guide member including a proximal end and a distal end that is adapted to be inserted into a patient, said guide member being adapted to rotate with respect to a longitudinal axis thereof;

an end effector for use during surgical procedures, said end effector being separable from and insertable into a patient through said guide member, and

actuation means for effecting movement of said end effector by rotation of said guide member.

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44. (New) The surgical instrument of claim 43, wherein said actuation means is remotely controlled from a user interface where a surgeon can manipulate an input device in controlling the movement of the instrument
 45. (New) The surgical instrument of claim 43, wherein said guide member includes a receiving passage and the distal end thereof is positioned a radial distance away from the longitudinal axis; said actuation means causing said end effector to orbit the longitudinal axis.
 46. (New) The surgical instrument of claim 43, wherein the actuating means effects movement of the end effector by operating the end effector via mechanical cabling.
 47. (New) The surgical instrument of claim 43, wherein the actuating means effects movement of the end effector by rotating a tubular holder of the guide member.
 48. (New) The surgical instrument of claim 47, wherein the actuating means effects movement of the end effector by pivoting the tubular holder of the guide member about an axis that is perpendicular to said longitudinal axis, and that defines a plane of pivoting of said tubular holder.

49. (New) The surgical instrument of claim 48, wherein the distal end of the tubular holder is positioned a radial distance away from the longitudinal axis, and wherein, when the tubular holder is rotated, the distal end moves out of said pivot plane.
50. (New) The surgical instrument of claim 43, wherein said actuating means comprises a plurality of drive motors, all of which are disposed remote from said instrument.
51. (New) The surgical instrument of claim 50, wherein all of said motors are maintained in a stationary position outside the sterile field.
52. (New) A robotically-controlled surgical instrument system for use in a surgical procedure, and including a surgical instrument having a proximal end and a distal end, said surgical instrument system comprising:
- an end effector at the distal end of said surgical instrument, said end effector for use within a patient's body during the surgical procedure;
 - a tubular holder for receiving and supporting said instrument, having a longitudinal axis, a proximal portion disposed outside the patient during surgery and a distal portion disposed within the patient's body during surgery, and having its distal portion positioned a radial distance away from the longitudinal axis;
 - said instrument distal end including a flexible distal portion coterminous with the distal portion of the tubular holder; and
 - a coupling assembly at the proximal end of said surgical instrument for securing said surgical instrument to an actuation unit within a surgical environment.
53. (New) The surgical instrument of claim 52, wherein the flexible distal portion of the instrument comprises a flexible instrument shaft that is bendable so as to comply with the configuration of the tubular holder distal portion.
54. (New) The surgical instrument of claim 53, wherein the instrument proximal end includes a rigid instrument shaft.

55. (New) The surgical instrument of claim 54, wherein the distal portion of the tubular holder is curved, the flexible instrument shaft being coterminous with the curved distal portion.
56. (New) The surgical instrument of claim 55, wherein said coupling assembly controls rotation of said tubular holder so as to provide an additional degree of freedom of movement to the end effector.
57. (New) A method of manipulating a surgical instrument, said method comprising the steps of:
- inserting a distal portion of a surgical guide member into a patient;
 - removably securing the surgical guide member in a surgical environment;
 - inserting a surgical tip member through the guide member; and
 - actuating a drive unit to effect the manipulating of the position of the surgical tip member within the patient with at least one degree of freedom of movement, and rotating the surgical guide member to provide at least an additional degree of freedom of movement of the surgical tip member.
58. (New) The method of claim 57, wherein said method further includes the step of receiving input signals from a user, and said step of manipulating the position of the surgical tip member being responsive to the input signals.
59. (New) The method of claim 57, wherein said method further includes the step of manipulating the position of the guide member by linearly translating the guide member.
60. (New) The method of claim 57, wherein said surgical tip member provides at least three degrees of freedom.

61. (New) A robotically controlled surgical instrument system comprising:
- an elongated instrument member including a tool at a distal end of the instrument member;
 - a guide member including a receiving port and having a proximal end disposed outside the patient and a distal end internal of the patient;
 - a support for the proximal end of the guide member so as to position the distal end thereof at an internal operative site;
 - said elongated instrument member engagable with the guide member port for positioning the tool so as to extend beyond the distal end of the guide member and at the operative site;
 - a user interface at which a surgeon may manipulate an input device; and
 - a drive unit controlled from said user interface for operating said instrument member in accordance with input device manipulations.
62. (New) The robotically controlled surgical instrument of claim 61, wherein said instrument member also includes a wrist member for providing at least one additional degree of freedom to the tool.
63. (New) The robotically controlled surgical instrument of claim 61, including an electrical controller intercoupling said user interface and said drive unit.
64. (New) The robotically controlled surgical instrument of claim 61, wherein said guide member has a longitudinal axis, and is controlled from said input device to rotate about said longitudinal axis.
65. (New) The robotically controlled surgical instrument of claim 61, wherein said guide member has a longitudinal axis, and is controlled from said input device to linearly translate in the direction of said longitudinal axis.

66. (New) The robotically controlled surgical instrument of claim 61, wherein said guide member support comprises a pivot axis support for the guide member, and said guide member is controlled from said input device to pivot at said support.
67. (New) The robotically controlled surgical instrument of claim 61, wherein said guide member has a longitudinal axis, and is controlled from said input device to rotate about said longitudinal axis, to linearly translate in the direction of said longitudinal axis, and to pivot from said support.
68. (New) The robotically controlled surgical instrument of claim 61, wherein said guide member support comprises a pivot axis support for the guide member, and said guide member is controlled from said input device to pivot at said support, said pivot providing motion of the proximal end of the guide member in substantially a single plane.
69. (New) The robotically controlled surgical instrument of claim 68, wherein the distal end of the guide member is positioned a radial distance away from a central axis of the guide member, so that when the guide member is rotated on said central axis, the tool carried by said elongated instrument member moves out of said single plane to thus provide an additional degree of freedom to the tool.
70. (New) The robotically controlled surgical instrument of claim 69, wherein said guide member comprises a guide tube, and the distal end of said guide tube is curved.
71. (New) The robotically controlled surgical instrument of claim 61, wherein said tool is detachably coupled to said drive unit.
72. (New) The robotically controlled surgical instrument of claim 61, wherein said drive unit comprises a plurality of stationary drive motors, all of which are disposed remote from said instrument member, and outside the sterile field.

73. (New) The robotically controlled surgical instrument of claim 61, wherein said guide member is detachable coupled from said support.
74. (New) A robotically-controlled surgical instrument system for use in surgical procedures, said surgical instrument system comprising:
- a guide assembly including an elongated portion disposed between proximal and distal ends thereof;
 - said elongated portion extending at least from an incision of the patient to an internal operative site;
 - a support for the proximal end of the guide assembly so as to position the distal end thereof at the internal operative site;
 - a surgical insert carrying an end effector for performing a surgical procedure at the internal operative site, and supported by said guide assembly; and
 - a drive unit coupled to said guide assembly for controlling the motion of said guide assembly about a single axis pivot.
75. (New) The robotically-controlled surgical instrument system of claim 74 wherein the controlled pivotal motion controls the proximal end of the guide assembly so as to move substantially only in a predetermined plane.
76. (New) The robotically-controlled surgical instrument system of claim 75 wherein the guide assembly is also controlled from said drive unit to rotate about its longitudinal axis.
77. (New) The robotically-controlled surgical instrument system of claim 74 wherein said support is a fixed position support, and said single axis pivot is taken from said fixed position support.

78. (New) A surgical instrument system for use in surgical procedures, said surgical instrument system comprising:
- a guide assembly including an elongated portion disposed between proximal and distal ends thereof;
 - a support for the proximal end of the guide assembly so as to position the distal end thereof at an internal operative site;
 - a surgical instrument insert carrying an end effector for performing a surgical procedure and supported by said guide assembly; and
 - a drive unit coupled to said guide assembly for controlling at least said guide assembly;
- said drive unit comprising a plurality of motors for controlling multiple degrees-of-freedom of said instrument; said motors for all of said multiple degrees-of-freedom being maintained in a stationary position even as the movement of the instrument is controlled remotely from a user interface.
79. (New) The surgical instrument system of claim 78 wherein said surgical instrument insert is detachably coupled to said drive unit.
80. (New) A surgical instrument system for use in surgical procedures, said surgical instrument system including:
- a guide assembly including an elongated portion disposed between proximal and distal ends thereof;
 - a support for the proximal end of the guide assembly so as to position the distal end thereof at an internal operative site;
 - a surgical tip assembly carrying an end effector for performing a surgical procedure and supported by said guide assembly; and
 - a drive unit coupled to said guide assembly for controlling at least said surgical tip assembly;
- said drive unit being remotely and independently supported relative to said surgical tip assembly, outside the sterile field, and yet interconnectable with said

surgical tip assembly for intercoupling drive from said drive unit to said surgical tip assembly for operation of said end effector.

81. (New) The surgical instrument system of claim 80 wherein said drive unit is maintained in a stationary position even as the movement of the instrument is controlled remotely from a user interface.

82. (New) A surgical instrument system for use in surgical procedures, said surgical instrument system including:

a guide assembly including an elongated portion disposed between proximal and distal ends thereof;

a support for the proximal end of the guide assembly so as to position the distal end thereof at an internal operative site;

a surgical tip assembly carrying an end effector for performing a surgical procedure and supported by said guide assembly; and

a drive unit coupled to said guide assembly for controlling at least said guide assembly;

said support including a fixed position support bracket for maintaining a location at the proximal end of the guide assembly at a fixed position location over the patient.

83. (New) The surgical instrument system of claim 82 wherein said guide assembly includes a guide tube that has its end displaced radially from a longitudinal axis thereof, and the bracket provides a single axis pivot location for the guide tube, whereby said guide tube is rotated under control of said drive unit so as to cause said end effector to orbit said longitudinal axis.

84. (New) A robotically controlled surgical instrument system comprising:

a guide that may be positioned in a surgical environment, said guide including a proximal end outside the patient and a distal end within the patient, said guide being

adapted for insertion into a patient for positioning of the distal end of said guide at an operative site of the patient;

a surgical insert carrying an end effector that is used in surgical procedures, received at the proximal end of said guide, and extending, when fully inserted, from the distal end of said guide so as to dispose the end effector beyond the distal end of the guide and at said operative site; and

a drive unit controlled from a user input device and coupled to said surgical insert for manipulating said surgical insert within the patient.

85. (New) The robotically controlled surgical instrument of claim 84, wherein said guide has a longitudinal axis, and is controlled from said input device to rotate about said longitudinal axis.
86. (New) The robotically controlled surgical instrument of claim 84, wherein said guide has a longitudinal axis, and is controlled from said input device to linearly translate in the direction of said longitudinal axis.
87. (New) The robotically controlled surgical instrument of claim 84, including a guide support that comprises a pivot axis support for the guide, and said guide is controlled from said input device to pivot at said support.
88. (New) The robotically controlled surgical instrument of claim 84, wherein said guide has a longitudinal axis, and is controlled from said input device to rotate about said longitudinal axis, to linearly translate in the direction of said longitudinal axis, and to pivot from said support.
89. (New) The robotically controlled surgical instrument of claim 84, including a guide support having a pivot axis support for the guide, and said guide is controlled from said input device to pivot at said support, said pivot providing motion of the proximal end of the guide in substantially a single plane.

90. (New) The robotically controlled surgical instrument of claim 89, wherein the guide includes a guide tube, and the distal end of the guide tube is positioned a radial distance away from an elongate axis of the guide tube, so that when the guide tube is rotated about said elongate axis, the end effector carried by said surgical insert moves out of said single plane to thus provide an additional degree of freedom to the end effector.
91. (New) The robotically controlled surgical instrument of claim 90, wherein said guide tube is curved.
92. (New) The robotically controlled surgical instrument of claim 84, wherein said end effector is detachably coupled to said drive unit.
93. (New) The robotically controlled surgical instrument of claim 84, wherein said drive unit comprises a plurality of drive motors, all of which are disposed remote from said surgical insert.
94. (New) The robotically controlled surgical instrument of claim 93, wherein all of said motors are maintained in a stationary position outside the sterile field.
95. (New) The robotically controlled surgical instrument of claim 84, wherein said surgical insert is controlled from said input device to rotate.
96. (New) The robotically controlled surgical instrument of claim 84, wherein said surgical insert has a wrist joint that is controlled from said input device to turn.
97. (New) A robotically controlled surgical instrument system comprising:
a guide member including an elongated portion having a longitudinal axis of rotation, a proximal end disposed outside the patient and a distal end internal of the patient;

a support for the proximal end of the guide member so as to position the distal end thereof through an incision in the patient to a location internal of the patient;

a surgical tip member including an end effector supported at a distal end of said guide member;

a user interface at which a surgeon may manipulate an input device; and

a drive unit controlled from said user interface for rotating said guide member about said longitudinal axis, and for controlling said guide member to pivot from its proximal end with only single axis motion.

98. (New) The robotically-controlled surgical instrument system of claim 97 wherein said guide member has its distal end positioned spaced radially from said longitudinal axis, and said drive unit rotates said guide assembly and, by virtue of the distal end being disposed a radial distance away from the longitudinal axis, thereby causing the end effector to orbit the longitudinal axis.
99. (New) The robotically-controlled surgical instrument system of claim 97 wherein said surgical tip member is engagable with the guide member for positioning the end effector so as to extend beyond the distal end of the guide member and at an operative site.
100. (New) The robotically-controlled surgical instrument system of claim 97 wherein said drive unit is controlled from said user interface for controlling at least said guide member at the incision.
101. (New) A surgical instrument system for use in surgical procedures, said surgical instrument system comprising:
- a guide assembly including a proximal portion, an elongated portion having a longitudinal axis of rotation and a distal portion that is adapted for insertion through an incision of a patient, and having a distal end that is positioned a radial distance away from the longitudinal axis;

a surgical tip assembly including an end effector supported at the distal end of said guide assembly; and

a drive unit coupled to at least said guide assembly for;
rotating said guide assembly and, and by virtue of the distal end being disposed a radial distance away from the longitudinal axis, thereby causing the end effector to rotate about the longitudinal axis, and

controlling said guide assembly to pivot at the incision with only single axis motion.

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102. (New) The surgical instrument system of claim 101 wherein said drive unit controls said guide assembly to pivot from its proximal end.
103. (New) The surgical instrument system of claim 101 wherein said drive unit controls said guide assembly to pivot, said pivot providing motion of the proximal end of the guide assembly in substantially only a single plane external of the patient.
104. (New) The surgical instrument system of claim 101 wherein said drive unit controls said guide assembly to pivot, said pivot providing motion at the incision so that the proximal end of the guide assembly moves in substantially only one plane external of the patient.